

NOTES ON THE MARINE SHELLS OF WESTERN AUSTRALIA,  
WITH DESCRIPTIONS OF NEW SPECIES.  
PART II.

By JOS. C. VERCO, M.D. (Lond.), F.R.C.S. (Eng.).

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PLATES XV. AND XVI.

This paper is the second in the series, continued from p. 219 of vol. xxxv., 1911, and deals with the genera *Helcioniscus*, *Patella*, *Nacella*, *Acmaea*, *Phenacolepas*, *Haliotis*, and *Schismope*.

It embraces also a list of shells received from Geraldton.

***Helcioniscus illibratus*, Verco.**

*Helcioniscus illibratus*, Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 205, pl. x., figs. 6-14; Hedley, Commonwealth of Australia, Fisheries, 1911, part 1, p. 93.

King George Sound beach, 3; Ellensbrook, 9; Yallingup, 4 (from these two localities the specimens have a more decided bluish-purple tint); Bunbury beach, 2; in 15 fathoms, 2; in 22 fathoms, 1 (about half as large again as the type); Rottneest Island, 1.

***Patella neglecta*, Gray.**

*Patella neglecta*, Gray, Capt. King's Survey of the Inter-tropical and Western Coasts of Australia, ii., Appendix, p. 492, 1827.

*P. (Scutellastra) neglecta*, Gray, Pilsbry, Man. Conch., 1891, vol. xiii., pp. 95, 96, pl. xx., figs. 41, 42, pl. lviii., figs. 40, 41.

*P. rustica*, Linn, Menke, Moll. Nov. Holl., p. 33, 1843, and Zeitschr. F. Malac., 1844, p. 62.

*Patella melanogramma*, (?) Gmelin, Sowerby, Genera of Shells, vol. i., p. 140.

*Patella zebra*, Reeve, Conch. Icon., 1854, pl. iv., figs. 7a, 7b, "Swan River."

*Locality*. — Esperance beach, few; Hopetoun, few; King George Sound, Rabbit Island, many, and up to full size between water-marks; Ellensbrook and Yallingup, many; Rottneest Island, 1.

This species does not appear to come much further east than Esperance. It was not found on St. Francis Island, nor has it been taken along the coast of South Australia.

On Rabbit Island it attains the length of 100 mm. Nearly every individual exceeding 25 mm. in length carries

one or more patelliform parasites. I thought, naturally, they were young individuals of the same species, but they proved to be always examples of what I have named and described as *Acmaea patellavecta*.

**Patella axiaerata**, n. sp. Pl. xv., figs. 3 and 4.

Shell small, depressed, conical, elliptical, apex somewhat antemedian, lateral margins somewhat concave, so as to be lifted off a flat surface. Apex blunt, surface smooth; colour opaque-white, numerous rays (18 in the type), golden-yellow, with darker golden axial hairlines in them. Margin simple, smooth. Spatula well marked, large, with a distinct neck and large head. Interior white, through which the yellow rays are visible.

*Dimensions*.—Length, 4·4 mm.; breadth, 3·2 mm.; height, 1·9 mm.

*Habitat*.—Type, Rottnest Island, with many others; King George Sound beach, 8 small.

*Variations*.—Some are shorter and higher, more convex in the hinder slope, more acute at the apex. The number of golden rays may be only 12 or 10, due to the fusion of two narrower into a larger one; sometimes the ray, which is at first single, becomes later double. In some examples the golden hairlines in the rays are conspicuous and numerous. The apical region inside, for a varying extent, may be of a yellowish-brown colour.

The shape of its base suggests that its usual *habitat* is the conical surface of another shell, and as this is a very common habit with *Acmaea*, it may belong to this genus. It recalls *Patella illibrata*, Verco, by its form and apex and rays. It was not taken alive.

Type is in my cabinet.

**Patella ustulata**, Reeve.

*Patella ustulata*, Reeve, Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 206; 1907, vol. xxxi., p. 99; and 1912, vol. xxxvi., p. 182.

This was taken at Esperance Bay and King George Sound; at Ellensbrook up to 25 mm. long, by 20 mm. wide, by 7 mm. high, the largest specimen taken in the West; at Yallingup and at Bunbury, up to 18 mm. long.

They vary greatly. A common form has from 12 to 14 broad white or yellow ribs; the rest of the shell may be white or yellow or black or pinkish-brown. Some, after a moderate growth in this fashion, become wholly black.

They do not reach the size of those at Beachport, which may be 47 mm. by 40 mm.

**Patella aculeata**, Reeve

*Patella aculeata*, Reeve, Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 207, and 1912, vol. xxxvi., p. 182.

Taken on the beach, King George Sound, 10, the largest is only 23 mm. by 19 mm.; Ellensbrook, 3, up to 21 mm. long; Yallingup, up to 14 mm. It was not taken above Cape Naturaliste. The specimens seem to diminish in size and scaliness as they go west and north, and are not so large as the South Australian shells, which may attain 40 mm. in length.

**Patella hepatica**, Pritchard and Gatliff.

*Patella hepatica*, Pritchard and Gatliff, Proc. Roy. Soc., Victoria, 1903, vol. xv. (New Series), part 3, p. 194; Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 207.

Esperance Bay, 3, up to 17 mm. by 13 mm.; "Albany" (Dr. Torr), 20 mm. by 15 mm. by 6.5 mm.; Yallingup, 6; Bunbury, 1. This—which is probably a variant of *P. ustulata*, Reeve—is smaller than the Victorian shell, and was not taken above Geographe Bay.

**Patella stellæformis**, Reeve.

*Patella stellæformis*, Reeve, Conch. Sys., 1842, vol. ii., p. 15, pl. cxxxvi., fig. 3; Verco, Trans. Roy. Soc., S.A., 1912, p. 182.

Taken on the beach at Esperance Bay, 1, very large, 39 mm. long, 37 mm. wide, and 12 mm. high, and 3 small specimens, scaly, with 8 ribs, the anterior splitting early into two; at Albany, many, 1 7-ribbed, the others 8-ribbed, outside speckled brown, inside white or brownish-yellow or speckled red-brown; at Ellensbrook, very many, up to 22 mm. long and 21 mm. wide and 6.5 mm. high, mostly 8-ribbed, some 7-ribbed, others 9-ribbed, rough and speckled; on Rott-nest Island, several, up to 18 mm. long and 15 mm. wide and 6.5 mm. high.

The reddish-brown specks outside may be arranged in radial series on the ribs, or scattered irregularly on the surface. Internally the spatula may be brown, but generally white. There may be a red-brown line along the groove of the ribs. No specimens of the polygonal variety, *P. chapmani*, Tenison-Woods, or of the variety *Acmea albida*, Tenison-Woods, were found. The typical forms were much more numerous and foliaceous than on the eastern shores of South Australia.

**Nacella parva**, Angas.

*Nacella parva*, Angas, Proc. Zool. Soc., London, 1878, p. 862, pl. liv., fig. 12; Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 208, 1907, vol. xxxi., p. 101, 1912, vol. xxxvi., p. 183.

Taken in King George Sound on the beach, and in 10 to 15 fathoms very many, and in 28 fathoms a few; on Bunbury beach, 3; in Geographe Bay, 15 fathoms, 2; off Fremantle, in 6 fathoms, 1. They vary greatly in width; some may be 6.75 mm. long by 2.25 mm. wide, and others 5.25 mm. long by 1.75 mm. wide, and so confirm the suggestion made in 1906 that *N. compressa*, Verco, is only a variant. They are none of them quite so wide as the South Australian examples, 5.6 mm. by 2.8 mm.; and none of them quite so narrow, 5 mm. by 1.6 mm., but are intermediate. At King George Sound they are much more common in the shallow dredging than anywhere in South Australia.

***Nacella crebrestriata*, Verco.**

*Nacella crebrestriata*, Verco, Trans. Roy. Soc. S.A., 1904, vol. xxviii., p. 144, pl. xxvi., figs. 20, 21; 1906, vol. xxx., p. 208; 1907, vol. xxxi., p. 101; and 1912, vol. xxxvi., p. 183.

King George Sound beach, 3; Yallingup, 5; Rott-nest Island, 2.

**Var. *roseoradiata*, var. nov.**

This is typically a broader and more elliptical shell, has about two-thirds as many radial striæ, and 15 or 16 deep-pink axial rays, gradually increasing in width.

This was taken at Guichen Bay, South Australia; but in much better condition and more abundantly at Ellensbrook and Yallingup. Some examples are oval rather than elliptical, being narrower anteriorly; they vary somewhat in width, and one has its lateral margins incurved, as though the narrow surface—*e.g.*, *Zostera*—on which it lived had shrunk, and consequently had led to the contraction of the sides of the aperture of the shell.

Type is in my cabinet.

***Nacella stowæ*, Verco.**

*Nacella stowæ*, Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., pl. x., figs. 4, 5; 1912, vol. xxxvi., p. 183.

King George Sound beach, 8; Bunbury beach, 4; Rott-nest Island, 2. Identical with the South Australian specimens, but in poor condition.

***Acmæa patellavecta*, n. sp. Pl. xv., figs. 5-7;  
pl. xvi., fig. 5.**

Shell solid, elliptical, conical. Apex at the junction of the anterior and middle third, eroded. Margin in profile concave at the sides (due to its habit of living on a patella). Anterior slope nearly straight, posterior somewhat convex.

Outer surface with 40 radial, low, broad, round ribs, with linear interspaces, slightly crenulating the margin. Obsolete accremental growth-lines cross the ribs. The general colour is a sordid white, and the surface is mostly eroded. The interior is bordered with a narrow continuous band of a grey colour, articulated with 40 equidistant blackish-brown radially arranged spots, corresponding with the intercostal spaces. The spatula is well marked, bluish-white, with distinct muscle-scars rather wide in front, so as to give it a decided neck, beyond which it projects with a convex end.

The radula consists of 105 rows of teeth with the formula 2 (3.0.3.) 2, or more correctly 2 ( $\frac{1}{1} \cdot 1 \cdot 0 \cdot 1 \cdot \frac{1}{1}$ ) 2. The marginals are simple, bent nearly at a right angle in the middle, with straight stems and curved cusps. The outer laterals are in line with each other, the inner of the two is only about half as wide as the other, with distinct cusps but with united bases which (though the radula may be picked to pieces) are inseparable. The inner laterals are at a higher level, and are close to each other, but their bases are quite separable. There is no central tooth. It has a triangular branchia extending from the left over the neck to the right, without any branchial cordon.

*Dimensions*.—Length, 31.5 mm.; breadth, 23 mm.; height, 14 mm.; height of the curve at the border, 2.5 mm.

*Locality*.—Type from Cape Naturaliste.

It is found also in abundance on Rabbit Island, King George Sound, and at Ellensbrook and Yallingup, south of Cape Naturaliste.

It lives on the shell of *Patella neglecta*, Gray. Nearly every example of which above 25 mm. in length carries one or more (hence its name).

*Variations*.—It may grow to the size of 41 mm. long by 32 mm. wide and 21.5 high. The ribs may increase to more than 50.

The outer surface is generally much eroded, so that the apex is absent. In one example, 18 mm. by 13 mm. by 5 mm., the top is a brown point without any sign of a spiral, .5 mm. by .25 mm. in size surrounded by a white area 2 mm. by 1 mm., from which project 9 primary rays. These increase rapidly by splitting and by intercalation to 23 at the margin.

The blackish markings inside the border vary with the number of ribs. They may be very distinct, but in the larger shells they fade out and may disappear altogether; sometimes in the smaller shells they may be very faint. The narrow marginal band may be so dark as to quite obscure



the spots. The colour inside varies. The inner border may be a pale heliotrope, within this an opaque white band, and then heliotrope as far as the muscle-scar. The interior may be wholly dark blotchy-brown, except the muscle-scar, which is white, and the front two-thirds of the spatula, which may be bluish-white. The brown may be more or less blotched about a whitish interior, or almost absent. In some a faint greenish-blue tint is present, deepest in the spatula.

*Diagnosis.*—Its *habitat*, on the back of living *Patella neglecta*, Gray, suggested that it might be the young of this mollusc: but it is not narrowed anteriorly, the ribs are low, round, and approximate: the apex is less eccentric, the spots inside—if present—are single, and not in couples. The dentition and branchiæ are not those of *Patella*, but of *Acmaea*.

Its other ally is *A. alticostata*, Angas, but its ribs are more numerous, lower, and more approximate than in Angas' species: it has not the intercostal curved concentric dark markings, and the internal marginal spots are disposed radially instead of laterally. The dentition of the radula separates them widely. *Vide* pl. xvi., figs. 3-5.

It closely resembles the figure of *Patella nigrosulcata*, Reeve, *Conch. Icon.*, 1885, Sp. 84a, *hab.* (?), and may prove to be this species; *Patella (scutellastra) stellæformis*, Reeve, *var. nigrosulcata*, Reeve, Pilsbry, *Man. Conch.*, 1891, vol. xiii., p. 100, pl. lxi., figs. 66, 67. Pilsbry gives no *habitat* for this variety, but for the species he gives "Japan to Port Jackson, South Australia," etc.

Though *P. stellæformis*, Reeve, is abundant, large, and typical in the localities where my shell is found, no intermediate forms were taken. The figures do not indicate a laterally concave base. If *P. stellæformis* has been proved by dissection to be a *Patella*, this cannot be a variety, because this is an *Acmaea*.

Type in my collection.

### *Acmaea alticostata*, Angas.

*Patella alticostata*, Angas, *Proc. Zool. Soc.*, London, 1865, p. 56, pl. ii., fig. 11; Verco, *Trans. Roy. Soc.*, S.A., 1912, vol. xxxvi., p. 183.

Taken at Esperance Bay, 1 measuring 26 mm. long by 22 mm. broad and 6 mm. high, in perfect condition, has only 9 very broad, round ribs with narrow intercostal spaces, but is plainly of this species; at King George Sound, abundant, and typical up to 44 mm. by 42 mm. by 12 mm.; at Ellensbrook, 3, up to 20 mm.; at Yallingup, 3, up to 23 mm.; at Bunbury, up to 14 mm.; at Rottnest, up to 25 mm.

***Acmaea flammea*, Quoy and Gaimard.**

*Patelloidea flammea*, Quoy and Gaimard, Voy. "Astrolabe," Zool., 1834, vol. iii., p. 354, pl. lxxi., figs. 15, 16; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 183.

Var. *Jacksoniensis*, Reeve (*Patella*), Conch. Icon., vol. viii., 1855, pl. xxxix., figs. 127a, 127b.

King George Sound beach, many, similar to our South Australian form, without a definite dark maltese cross, but with four white radial bands more or less irregular and indistinct. Shape mostly narrowed in front, some very much; Ellensbrook; Yallingup; Bunbury, many, up to 17 mm. by 13 mm. by 5.5; Bunbury; Rottnest Island, many and large, up to 25 mm. by 20 mm. by 12.5 mm.

Var. *Crucis*, Tenison-Woods, Proc. Roy. Soc., Tasmania, 1877 (1876), p. 52.

King George Sound beach, up to 20 mm. by 16 mm.; Yallingup; Bunbury; Rottnest Island, up to 25 mm. by 20 mm. by 11.5 mm.

"Geraldton and Abrolhos Island" (Dr. Torr). They are identical with the South Australian examples in shape, size, and colouring.

***Acmaea conoidea*, Quoy and Gaimard.**

*Patelloidea conoidea*, Quoy and Gaimard, Voy. "Astrolabe," Zool., vol. iii., 1834, p. 355, pl. lxxi., figs. 5, 7; Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 214.

Ellensbrook, 1, half-grown. A form was found on the rocks at the south end of Rottnest Island, the largest example being 22 mm. long, 18 mm. wide, and 12.5 mm. high; it may be 18 mm. by 13.5 mm. by 8 mm., or 15 mm. by 11 mm. by 4 mm. There may be about 16 radial, thread-like ribs, with from 2 to 5 intervening threadlets. These may be absent except for obsolete primary threads. The apex is nearly central, slightly anterior and blunt. The colour is wholly black, with a black marginal band within. The rest of the interior is white, except the apical third, which is lighter or darker brown. In some the marginal black band may be broken by a linear radial extension of the white interior to the edge at one point towards the back, or at two symmetrical points or at several, and in some specimens radial black colour-bands are visible in the interior through the white. When the shell is eroded outside some four or five white radial bands may be displayed or quite a number, or the erosion may destroy all the black outer coating and leave only white; and if the rubbing and rolling affect the margin, it reveals an irregularly articulated border of white and black. This, I think, is probably the *P. conoidea* of Quoy. Though

I sought carefully on every beach examined for his species, I could not find any shell to match his unique type specimen, and I think it is probably somewhat of a monstrosity as regards its comparative height. The lateral concavity of its borders is explained by its resting on some convex surface, while erosion has removed both sculpture and colour from its upper three-fourths. Although the shells gathered by me are so distinctive in some examples by their wholly deep-black exterior, their internal black border, and elate conical shape, I feel sure they are only a further variant of the shells taken from the same rocks which I have recorded under the name of *A. flammea*, Quoy and Gaimard, *var. jacksoniensis*, Reeve.

***Acmæa calamus***, Crosse and Fischer.

*Patella calamus*, Crosse and Fischer, Journ. de Conch., 1864, p. 348, and 1865, p. 42, pl. iii., figs. 7, 8; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 184.

Var. ***polyactina***, Verco.

Taken on King George Sound beach, 6; at Yallingup, 4; on Bunbury beach, 3; in Geographe Bay, 15 fathoms 2, in 22 fathoms 3; off Fremantle, in 6 fathoms, 2; on Rott-nest Island, 3; "Cottesloe," 1; "Geraldton," 1. This variety seems to replace the typical shell in Western Australia.

***Acmæa septiformis***, Quoy and Gaimard.

*Patelloida septiformis*, Quoy and Gaimard, Voy. "Astrolabe," Zool., 1834, vol. iii., p. 362, pl. lxxi., figs. 43, 44; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 184.

King George Sound beach, up to 15 mm. long and 12 mm. wide; Ellensbrook, 3, worn; Yallingup, 1, worn; none further north.

***Acmæa subundulata***, Angas.

*Acmæa subundulata*, Angas, Proc. Zool. Soc., London, 1865, p. 155; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 185.

A number were taken on the beach at Esperance Bay, but none further west.

***Phenacolepas calva***, Verco.

*Scutellina calva*, Verco, Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 217, pl. viii., figs. 9, 10; also *op. cit.*, 1912, vol. xxxvi., p. 185.

King George Sound beach, 1; in 14 fathoms, 1.



**Phenacolepas alboradiata**, Verco.

(*Scutellina*) Trans. Roy. Soc., S.A., 1906, vol. xxx., p. 217; also *op. cit.*, 1912, vol. xxxvi., p. 185.

King George Sound beach, 1.

**Haliotis albicans**, Quoy and Gaimard.

*Haliotis albicante*, Quoy and Gaimard, Voy. "Astrolabe," Zool., vol. iii., pl. lxxviii., figs. 1, 2.

*H. albicans*, Quoy and Gaimard, Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 185.

Taken at King George Sound, the *type locality*.

**Haliotis elegans**, Koch.

*Haliotis elegans*, Koch, in Philippi, Abbild und Besch. Conch., 1844, vol. i., p. 119, pl. i., figs. 1, 2; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 186.

The *type locality* is "the western shore of New Holland, very rare." It was taken on Rottnest Island.

**Haliotis conicopora**, Peron.

*Haliotis conicopora*, Peron, Voy. Terr. Austr., vol. ii., 1816, p. 80; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 187. Synonyms are *H. tubifera*, Lamarck, and *H. granti*, Pritchard and Gatliff.

Taken at Esperance; in King George Sound; at Ellensbrook, measuring 17.5 cm. by 13.5 cm.; and on Rottnest Island.

**Haliotis roei**, Gray.

*Haliotis roei*, Gray, King's Voy., vol. ii., Appendix, 1827, p. 493; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 188.

Taken at Esperance Bay, King George Sound, Ellensbrook, Bunbury, and Rottnest Island. This is by much the most common *Haliotis* in Western Australia. It may be 10 cm. long by 8.2 cm. broad. It appears to have come round from the west along the southern coast of Australia, and reached Encounter Bay.

**Haliotis tricostalis**, Lamarck.

*Haliotis tricostalis*, Lamarck, Anim. S. Vert., 1822, p. 218; also (2nd Edition, Deshayes, etc.), 1843, vol. ix., p. 30, No. 14 "Java seas"; Deshayes, Encyc. Meth., 1830, vol. ciii., Vers, vol. ii., p. 181, No. 12; Delessert, Recueil., 1841, pl. xxxiii., figs. 8a, 8b; Menke, Moll. Nov. Holl., 1843, p. 32, No. 177, "West coast of New Holland"; H. and A. Adams, Gen. Recent Moll., 1858, vol. i., p. 443, pl. 1., fig. 7 (*Padollus*); Chenu, Man. Conch., 1859, vol. i., p. 368, figs. 2746, 2747; Weinkauff, Conch. Cab. (Ed. Küster), 1883, Band. vi., Abt. 1.B., p. 13, Sp. 10, pl. v., figs. 3, 4;

Pilsbry, Tryon, Man. Conch., 1890, vol. xii., p. 123, pl. xii., pp. 84, 85; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 190.

Hedley, in Proc. Linn. Soc., N.S.W., 1906 (1905), part 4, p. 521, writes:—"Pilsbry marks Montfort's name (*i.e.*, *Haliotis rubicundus*) as doubtful, but it was recognized and accepted by Dr. J. E. Gray in King's Survey Trop. Austr., Appendix ii., 1827, p. 495, and he had unusual facilities for ascertaining the facts of the case." In May, 1907, he wrote to me privately:—"I find Bolten has a *Haliotis rubicunda*, Mus. Bolt., p. 14, No. 160, which upsets the later *H. rubicundus* of Montfort. I suppose *H. tricostalis*, Lamarck, 1822, should be called *H. scalaris*, Leach, 1814. The copy of Anim. S. Vert. in the library of the Australian Museum, Sydney, formerly belonged to Wm. Swainson. In the margin of p. 218 is a pencil note in Swainson's hand, 'This is the *Padollus scalaris* of Leach.'" Hedley's suggestion is commended to those who have the literature and material necessary to settle the question. Meanwhile I use the well-known name of Lamarck.

The species is less common than *H. roei*, Gray, but yet not rare. It was taken at Esperance, Albany, Ellensbrook, Bunbury, and Rottneest Island. The last locality provided a specimen measuring 11.5 cm. by 9.25 cm.

#### **Schismope atkinsoni**, Tenison-Woods.

*Scissurella atkinsoni*, Tenison-Woods, Proc. Roy. Soc., Tasmania, 1877 (1876), p. 149; (*Schismope*) Verco, Trans. Roy. Soc., S.A., 1912, p. 191.

Taken on Bunbury beach, 1.

#### **Schismope pulchra**, Petterd.

*Schismope pulchra*, Petterd. Journ. of Conch., 1884, vol. iv., p. 139, No. 17; Verco, Trans. Roy. Soc., S.A., 1912, vol. xxxvi., p. 191.

Hopetoun beach, 2; King George Sound beach, 2.

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#### A LIST OF SHELLS RECEIVED FROM GERALDTON, WESTERN AUSTRALIA.

Two or three years ago Dr. Torr brought me from Geraldton, and the Abrolhos or Houtman Islands close by, a number of shells he had collected there, and during this year Mr. Bardwell, a resident in the town, has sent me a small consignment. From this material I have prepared a list of all the species received up to the present. The two

localities are so adjacent that I have placed the species from both of them together. An asterisk has been attached to those which are found in South Australian waters, so that at a glance the proportion of species common to the two regions can be noted.

Of the 150 shells identified in this list, 108 are found in South Australia. Of the 12 shells not named, 4 are almost certainly found there, and possibly three others, or 112 probably, and 115 possibly among 162; that is, 71 per cent. These are, of course, the most common shells, and if the same ratio holds with the rare species, nearly three-fourths of the marine mollusca will be common to the two far distant localities. The proportion of 71 per cent. applies to the Pelecypods and to the Gasteropods alike.

- \**Spirula spirula*, *Linne*, 1758, *Nautilus*.
- Cadulus occiduus*, *Verco*, 1912.
- Cryptoplax*, sp.
- Patella neglecta*, *Gray*, 1827.
- \**Nacella parva*, *Angas*, 1878.
- \**Acmæa alticostata*, *Angas*, 1865, *Patella*.
- \**Acmæa septiformis*, 1834, *Patelloidea*.
- \**Acmæa crucis*, *Tenison-Woods*, 1877.
- \**Acmæa polyactina*, *Verco*, 1912.
- Acmæa patella-vecta*, *Verco*, 1912.
- \**Haliotis roei*, *Gray*, 1827.
- \**Megatebennus omicron*, *Crosse and Fischer*, 1864,  
    *Fissurella*.
- \**Macroschisma tasmaniæ*, *Sowerby*, 1866.
- \**Gena nigra*, *Quoy and Gaimard*, 1834, *Stomatella*.
- \**Turbo jourdani*, *Kiener*, 1839.
- \**Turbo stamineus*, *Martyn*, 1784, *Limax*.
- Turbo pulcher*, *Reeve*, 1842.
- Turbo ticaonicus*, *Reeve*, 1842.
- \**Astralium fimbriatum*, *Lamarck*, 1822, *Trochus*.
- Astralium stellare*, *Gmelin*.
- \**Phasianella australis*, *Gmelin*.
- \**Phasianella ventricosa*, *Quoy and Gaimard*, 1834.
- \**Phasianella variegata*, *Lamarck*, 1822.
- \**Phasianella rosea*, *Angas*, 1867, *Eutropia*.
- Phasianella*, sp.
- \**Cyclostrema tatei*, *Angas*, 1878.
- Trochus obeliscus*, *Gmelin*.
- \**Clanculus plebeius*, *Philippi*, 1846, *Trochus*.
- \**Monodonta melanloma*, *Menke*, 1843.
- Monodonta (Chlorodiloma) zeus*, *Fischer*, 1874, *Trochus*.
- \**Cantharidus lehmanni*, *Menke*, 1843, *Trochus*.

- \**Cantharidus pulcherrimus*, *Wood*, 1828, Trochus.
- \**Thalotia conica*, *Gray*, 1827, Monodonta.
- \**Thalotia chlorostoma*, *Menke*, 1843, Trochus.
- \**Thalotia neglecta*, *Tate*, 1893.
- Thalotia indistincta*, *Wood*, 1828, Trochus.
- \**Phasianotrochus irisodontes*, *Quoy and Gaimard*, 1834, Trochus.
- \**Leiopyrga octona*, *Tate*, 1891.
- \**Euchelus baccatus*, *Menke*, 1843, Monodonta.
- \**Euchelus ampullus*, *Tate*, 1893.
- Nerita undata*, *Linne*.
- Nerita polita*, *Linne*, var. *antiquata*, *Recluz*, 1841.
- \**Syrnola tinca*, *Angas*, 1871.
- \**Odostomia simplex*, *Angas*, 1871.
- \**Odostomia pupæformis*, *Sowerby*, 1865.
- \**Odostomia vincentina*, *Tryon*, 1886.
- \**Oscilla tasmanica*, *Tenison-Woods*, 1877 (1876), Parthenia.
- \**Turbonilla hofmani*, *Angas*, 1867.
- \**Turbonilla fusca*, *A. Adams*, 1855, Chemnitzia.
- \**Cingulina spina*, *Crosse and Fischer*, 1864, Turritella.
- \**Scala aculeata*, *Sowerby*, 1844, Scalaria.
- \**Scala jukesiana*, *Forbes*, 1852, Scalaria.
- \**Crossea labiata*, *Tenison-Woods*, 1876 (1875).
- \**Litorina mauritiana*, *Lamarck*, 1822, Phasianella.
- Tectarius rugosus*, *Menke*, 1843, Littorina.
- Planaxis sulcatus*, *Born*, 1778, Buccinum.
- Modulus disculus*, *Philippi*, 1846.
- \**Risella melanostoma*, *Gmelin*, 1789, Trochus.
- \**Diala monile*, *A. Adams*, 1862, Alaba.
- \**Diala lauta*, *A. Adams*, 1864, Alaba.
- \**Capulus conicus*, *Schuhmacher*, 1817, Amalthæa.
- \**Capulus antiquatus*, *Linne*.
- Crepidula aculeata*, *Gmelin*, Patella.
- \**Ianthina violacea*, *Bolten*.
- \**Natica collei*, *Recluz*, 1843.
- \**Polinices conica*, *Lamarck*, 1822, Natica.
- \**Eunaticina papilla*, *Gmelin*, Sigaretus.
- \**Truncatella scalarina*, *Cox*, 1868.
- \**Truncatella marginata*, *Küster*.
- \**Rissoa (Setia) nitens*, *Frauenfeld*, 1867, Setia.
- Rissoa*, sp.
- Rissoa*, sp.
- Rissoa*, sp.
- Rissoa*, sp.
- Rissoa*, sp.
- Rissoa*, sp.

- \*Rissoa (Epigrus) petterdi, *Brazier*, 1894, *Rissoa*.  
 \*Rissoina flexuosa, *Gould*, 1861.  
 \*Vermicularia siphon, *Lamarck*, 1818, *Serpula*.  
 \*Siliquaria weldii, *Tenison-Woods*, 1876, *Tenagodus*.  
 \*Bittium granarium, *Kiener*, 1842, *Cerithium*.  
 \*Cerithium icarus, *Bayle*, 1880.  
   *Cerithium cordigerum*, *Bayle*, 1880.  
 \*Triphora granifera, *Brazier*, 1894.  
 \*Plesiotrochus monachus, *Crosse and Fischer*, 1864,  
   *Cerithium*.  
   *Campanile læve*, *Quoy*, 1834, *Cerithium*.  
   *Strombus floridus*, *Lamarck*, 1822.  
   *Bursa anceps*, *Lamarck*, *Ranella*.  
   *Cypræa caput-serpentis*, *Linne*.  
   *Cypræa carneola*, *Linne*.  
   *Tonna variegata*, *Lamarck*, 1822, *Dolium*.  
 \*Cymatium exaratum, *Reeve*, 1844, *Triton*.  
 \*Pyrene versicolor, *Sowerby*, 1832, *Columbella*.  
 \*Pyrene semiconvexa, *Lamarck*, 1822, *Buccinum*.  
 \*Pyrene austrina, *Gaskoin*, 1851, *Columbella*.  
 \*Pyrene atkinsoni, *Tenison-Woods*, 1876, *Drillia*.  
   *Cantharus undosus*, *Linne*, 1758, *Buccinum*.  
 \*Arcularia pauperata, *Lamarck*, 1822, *Buccinum*.  
   *Arcularia glans*, *Linne*, 1758, *Buccinum*.  
   *Arcularia dorsata*, *Bolton*, *Buccinum*.  
   *Thais hippocastanea*, *Linne*, 1758, *Murex*.  
   *Thais succincta*, *Martyn*, 1784, *Buccinum*.  
 \*     var. *textiliosa*, *Lamarck*, 1822.  
 \*     var. *ægrotata*, *Reeve*.  
   *Thais lineata* (?), *Lamarck*.  
   *Drupa chaidea* (?), *Duclos*, 1832, *Purpura*.  
   *Drupa margariticola*, *Broderip*, 1832, *Murex*.  
   *Megalatractus aruanus*, *Linne*, 1758, *Murex*.  
 \**Marginella angasi*, *Brazier*, 1870.  
   *Mitra*.  
 \**Cymbium flammeum*, *Bolton*, 1798, var. *miltonis*, *Gray*,  
 \**Oliva australis*, *Duclos*, 1835.  
 \**Clathurella rufozonata*, *Angas*, 1877.  
 \**Cythara kingensis* (?), *Petterd*, 1879, *Daphnella*.  
 \**Conus anemone*, *Lamarck*, 1810.  
   *Conus miliaris*, *Hwass*.  
 \**Bulla australis*, *Gray*, 1825.  
   *Hydatina physis*, *Linne*, 1758, *Bulla*.  
 \**Tornatina fusiformis*, *A. Adams*, 1854, *Bulla*.  
 \**Retusa*, sp.  
 \**Atys exigua* (?), *A. Adams*, 1854.  
 \**Siphonaria baconi*, *Reeve*, 1856.



- \*Siphonaria stowæ, *Verco*, 1906.  
Siphonaria, sp.
- \*Nucula micans, *Angas*, 1878.
- \*Arca navicularis, *Bruguiere*, 1797.
- \*Barbatia domingensis, *Lamarck*, 1822, Arca.
- \*Glycimeris radians, *Lamarck*, 1819, Pectunculus.
- \*Meleagrina fimbriata, *Dunker*, 1852, Avicula.  
Vulsella vulsella, *Linne*.  
Septifer bilocularis, *Linne*, 1756, Mytilus.
- \*Brachyodontes erosus, *Lamarck*, 1819, Mytilus.
- \*Modiolaria paulucciæ, *Crosse*, 1863, Crenella.
- \*Cardita crassicosta, *Lamarck*, 1819.  
Cardita incrassata, *Sowerby*, 1825.
- \*Chama spinosa, *Broderip*.  
Chama fimbriata, *Reeve*, or ruderalis, *Lamarck*.
- \*Lucina tatei, *Angas*, 1878.
- \*Loripes icterica, *Reeve*, 1850.
- \*Thyasira globosa, *Forskal*.
- \*Lasea scalaris, *Philippi*, 1847, Poronia.  
Lepton, sp.
- \*Rochefortia donaciformis, *Angas*, 1877, Mysella.
- \*Cardium elongatum, *Bruguiere*.
- \*Cardium erugatum, *Tate*, 1888.  
Cardium, sp.  
Codakia interrupta, *Lamarck*, 1818, Cytherea.
- \*Sunetta excavata, *Hanley*, 1842, Cytherea.  
Chione marica, *Linne*, Venus.
- \*Chione undulosa, *Lamarck*, 1818, Venus.  
Gafrarium australe, *Sowerby*, 1851, Circe.
- \*Gafrarium angasi, *E. A. Smith*, 1885, Circe.
- \*Venerupis crenata (?), *Lamarck*, 1818.
- \*Petricola lapicida, *Chemnitz*, Venus.
- \*Tellina albinella, *Lamarck*, 1818.  
Tellina perna, *Spengler*.
- \*Tellina decussata, *Lamarck*, 1815.
- \*Donax brazieri, *E. A. Smith*, 1891.  
Donax columbella, *Lamarck*.  
Donax sulcarius, *Menke*.
- \*Saxicava arctica, *Linne*, 1767, Mya.
- \*Pholas australasiæ, *Sowerby*, 1849.